

Title: Novel Numerical Algorithms for Fluid-Structure Interaction and Optimization

Abstract

Fluid-structure interaction (FSI) has been receiving more and more attentions in the past two decades because it is associated with nonlinear dynamics, structure design, renewable energy research. Numerical algorithms have been developed to simulate the interaction of fluids and structures. Nevertheless, there are more and more new and challenging FSI problems raising by physicists and engineers. For example, the so-called bladeless wind turbine based on the flow-induced vibration is proposed to extract flow energy in wind. To predict the conversion efficiency of the new design, a new algorithm is required to simulate the behavior of the bladeless wind turbine in cross wind. To promote research in FSI problems, this mini-symposium is organized. Studies relevant with numerical algorithms for FSI problems are welcome in this mini-symposium. Since FSI is widely studied in flow energy converters such as a wind turbine, applications of optimization algorithms such as the radial basis function networks or artificial intelligence for design of flow energy converters are also welcome.

Organizers

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